Composition

It's time now to talk about composition.

Composition is another component of object-oriented programming.

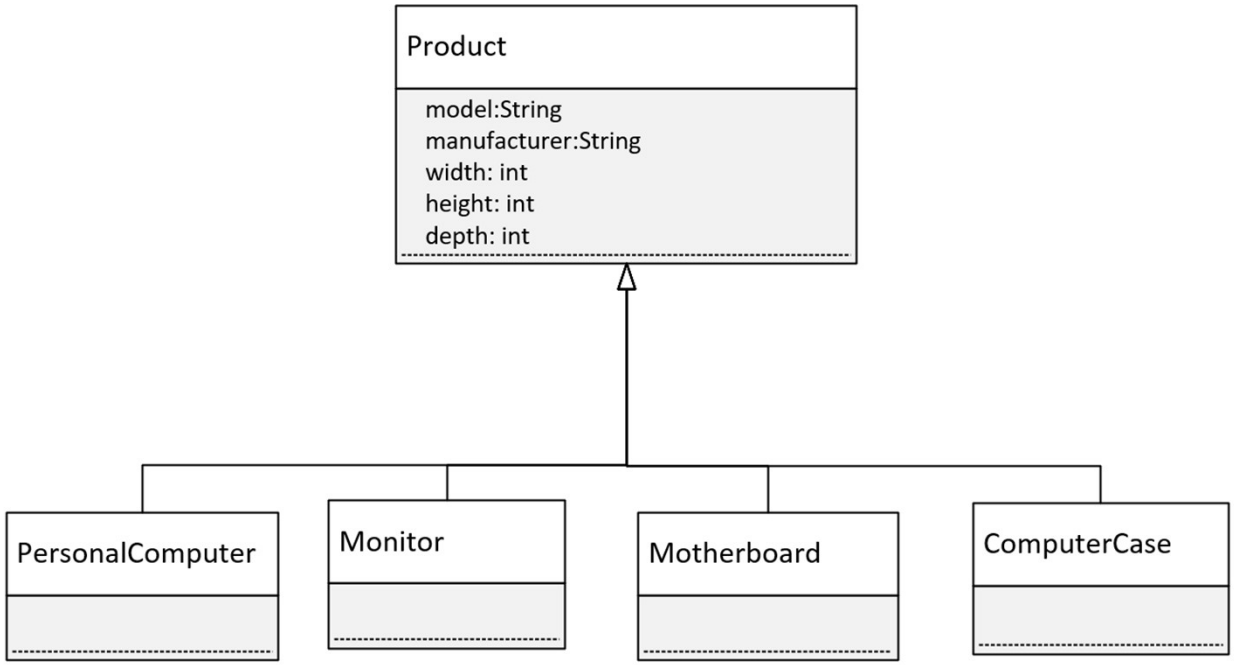
Inheritance

In this instance, we have a base class called Product.

All of our computer parts are going to inherit from Product.

All our parts will then have the same set of attributes, a manufacturer and model, and dimensions, the width, height, and depth in other words.

All of these items are products, a particular type of Product.



Inheritance vs. Composition

Inheritance defines an **IS A** relationship.

Composition defines a **HAS A** relationship.

Inheritance vs Composition

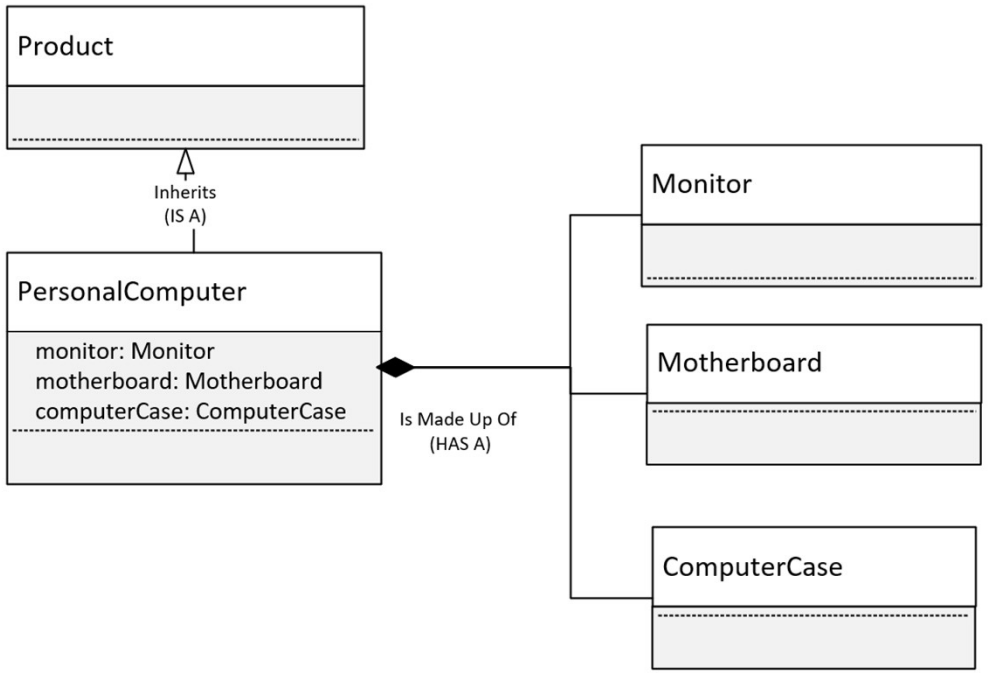
To keep this diagram simple, PersonalComputer inherits from Product.

But a Personal Computer, in addition to being a product, is actually made up of other parts.

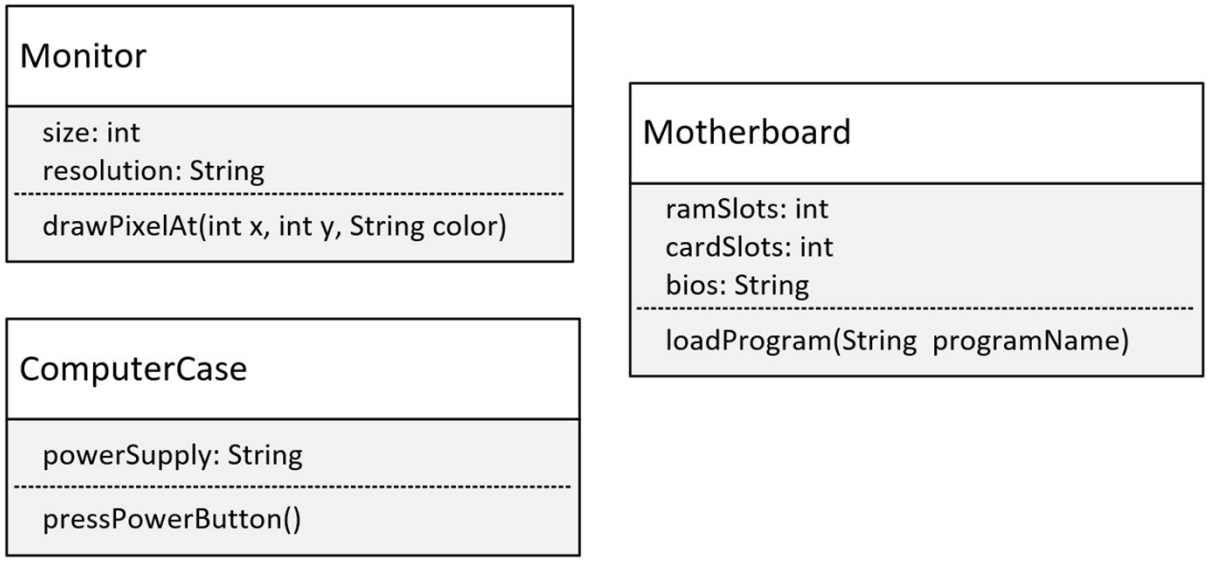
Composition is actually modeling parts, and those parts make up a greater whole.

In this case we're going to model the personal computer.

And we're modeling the **has a** relationship, with the motherboard, the case, and the monitor.

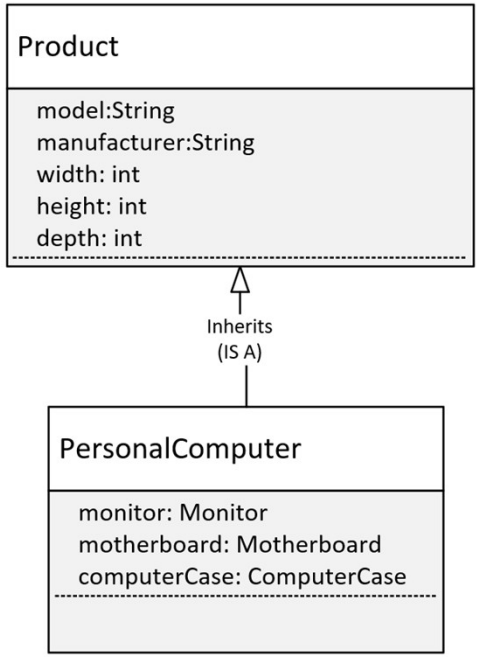


The Parts



This diagram shows the 3 classes that will make up the personal computer.

PersonalComputer



This will be our personal computer, and we've said it inherits from Product.

But it also has 3 fields, which are classes, these are Monitor, Motherboard, and ComputerCase.